Address *100 Barr Harbor Drive*
PO Box C700
W. Conshohocken, PA
19428-2959 | USA

Phone *610.832.9500*
Fax *610.832.9555*
e-mail *service@astm.org*
Web *www.astm.org*

Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

Chairman: W. JAMES BOVER, ExxonMobil Biomedical Sciences, 1545 Route 22 East, PO Box 971, Annandale, NJ 08801-0971, (908) 730-1048, Fax: (908) 730-1151, e-mail: w.j.bover@exxonmobil.com
First Vice Chairman: KENNETH O. HENDERSON, Cannon Instrument Co., 30 Doe Dr., Port Matilda, PA 16870, (814) 353-8000 ext:265, Fax: (814) 353-8007, e-mail: kenohenderson@worldnet.att.net
Second Vice Chairman: SALVATORE J. RAND, 221 Flamingo Dr., Fort Myers, FL 33908, (239) 481-4729, Fax: (239) 481-4729, e-mail: sjrand@earthlink.net
Secretary: MICHAEL A. COLLIER, Petroleum Analyzer Co. LP, PO Box 206, Wilmington, IL 60481, (815) 458-0216, Fax: (815) 458-0217, e-mail: macvarlen@aol.com
Assistant Secretary: JANET L. LANE, ExxonMobil Research & Engineering, 600 Billingsport Rd., PO Box 480, Paulsboro, NJ 08066-0480, (856) 224-3302, Fax: (856) 224-3616, e-mail: janet.l.lane@exxonmobil.com
Staff Manager: DAVID R. BRADLEY, (610) 832-9681, Fax: (610) 832-9668, e-mail: dbradley@astm.org

Reply to:

Scott Parke
ASTM Test Monitoring Center
6555 Penn Avenue
Pittsburgh, PA 15206

June 8, 2004

To: Single Cylinder Diesel Surveillance Panel

Enclosed are the minutes of the SCOTE Surveillance panel teleconference held May 26, 2004. Please forward any corrections or additions to my attention.

Scott Parke
Secretary SCOTE Surveillance Panel

Attachments
cc: ftp://ftp.astmtmc.cmu.edu/docs/diesel/scote/minutes/TELECONFERENCE%202004-05-26.pdf

distribution: Email

TELECONFERENCE MINUTES

SINGLE CYLINDER DIESEL SURVEILLANCE PANEL

HELD MAY 26, 2004

13:00cdt CALL TO ORDER

The teleconference began at 13:00 cdt. The participants are listed in attachment 1.

13:01cdt TLHC DECIMAL REPORTING

This teleconference was convened to discuss some unintended consequences of decimal reporting for TLHC and transformed TLHC results. These unintended consequences were brought to light during beta testing of report package revisions necessitated by the recent adoption of a TLHC correction factor for 1N testing.

Prior to this meeting, Scott Parke sent the panel an email message describing the problem and several of the options to address it. This message is included as attachment 2. Scott summarized the message and solicited opinions from the group.

Discussion largely centered around the fact that if the candidate pass limit for TLHC is 3% then any TLHC value that *rounds to* 3% (i.e. TLHC < 3.5%) passes. Previous panel decisions were made based on the premise that the correction factor adopted effectively raised the pass limit to 13%. These prior decisions did not account for rounding.

Scott suggested that one way to meet all of the requirements heretofore discussed would be to:

1. Use the final transformed TLHC (TTLHCFNL) values for control charting rather than transforming the lab-reported TLHCFNL (which loses resolution after rounding to whole percent).
2. Use TLHCFNL rounded to whole percent for comparison against the pass limit.
3. Lower the correction factor from −1.320 to −1.135 to restore the effective pass limit to 13%.

A table showing how all possible rated TLHC percent values would be reported under this scenario is shown in the "Back-transformed (no decimals)" column of attachment 3.

The panel voted 7-0-0 (for-against-waive) to adopt this approach.

13:20cdt ADJOURNMENT

The call was concluded at 13:20cdt.

Attendance:

Abdul Cassim	Caterpillar
Chuck Dutart	Caterpillar
Dan Domonkos	Lubrizol
Jim McCord	Southwest Research
Bob Campbell	Ethyl
Chris Mazuca	PerkinElmer
Jim Gutzwiller	Infineum
Chris Richtberg	Southwest Research
Scott Parke	Test Monitoring Center

From: Scott Parke
Sent: Monday, May 24, 2004 3:13 PM
To: 'mccord'; 'mazuca'; 'dutart'; 'cassim'; 'griggs'; 'domonkos'; 'campbell'; 'fetterman'; 'gutzwiller'; 'sutherland'; 'conti'; 'buck'
Subject: decimal reporting for 1k/1n tlhc

The introduction of the TLHC correction factor has brought to my attention a problem with TLHC reporting precision. The problem is independent from the correction factor and has existed all along but has never before come up because no one has ever had a TLHC severity adjustment.

The problem is this: TLHC is rated in whole percent. It is reported in whole percent. However, when a severity adjustment (or correction factor) is applied it is added to the transformed value. The severity adjusted (and correction factored) value then has to be transformed back to obtain the final reported value.

With no severity adjustment or correction factor this is straightforward… you rate 5%, you report 5%. Once you enter transformed space, though, the question arises of how many decimal places you keep when you back-transform. Please see the attached table. Applying a correction factor forces you into transformed space. A 5% transformed and corrected becomes 0.472. Back-transforming this value gives 0.603%. If you round this value to whole percent you get 1%. Trouble is, rated values of 5%, 6%, 7% or 8% all get reported as 1%.

This is a problem for both reference and candidate testing.

The candidate pass limit is 3%. 13%, 14%, and 15% rated values all correct/back-transform to 3% without decimal places. Only the 13% is truly under 3 (2.740% – again, refer to the attached table). The 14% and 15% are 3.007% and 3.274% respectively.

On the reference side, look, for example, at the new target value for oil 1004-3: 0.1806 (this is a transformed value). This is equivalent to a rated value between 3% and 4%. But 1%, 2%, 3% and 4% are all reported as 0% if decimals are neglected. Clearly, a result of 1% (mild of target) should not have the same influence on a lab's control chart as 4% (severe of target).

So, what to do?

Option 1:
Report whole percent for TLHC.
Ramifications:
- Candidate pass limit effectively becomes 15%
- Influence on lab control charts is "notchy"; TLHC is in (roughly) 4% clumps

Option 2:

Report decimals for TLHC.
Ramifications:
· Candidate pass limit is effectively 15% - with the D4485 limit published as “3%”, candidate results are rounded to have no decimal places
· Influence on lab control charts is unchanged from present behavior

Option 3:
Report whole percent for TLHC but use lab-reported value of TTLHCFNL for control charting.
Ramifications:
· Candidate pass limit is 15%
· Control chart behavior is the same as current

Option 4:
Report whole percent for TLHC, control chart TTLHCFNL, and revise correction factor to result in candidate pass limit of 13%
Ramifications:
· Candidate pass limit is 13%
· Control chart behavior is the same as current

Option 5:
?

Please take a few moments to ponder these options (or devise another). If the chairman is agreeable, I’d like for us to get together briefly in the next day or two to decide what the practice will be for future test reporting.

Scott Parke
ASTM Test Monitoring Center
6555 Penn Avenue
Pittsburgh, PA 15206
Voice: 412-365-1036
Fax: 412-365-1047
Email: sdp@astmtmc.cmu.edu

Impact of Decimal Length on TLHC Reporting

Rated Value	Transformed and Corrected	Back-transformed	Back-transformed (no decimals)
1	-0.442	-0.357	0
2	-0.036	-0.036	0
3	0.251	0.286	0
4	0.474	0.607	1
5	0.657	0.929	1
6	0.811	1.250	1
7	0.944	1.571	2
8	1.062	1.893	2
9	1.168	2.214	2
10	1.263	2.536	3
11	1.350	2.857	3
12	1.430	3.178	3
13	**1.504**	**3.4999**	**3**
14	1.573	3.821	4
15	1.638	4.143	4
16	1.698	4.464	4
17	1.755	4.786	5
18	1.809	5.107	5
19	1.861	5.428	5
20	1.910	5.750	6
21	1.956	6.071	6
22	2.000	6.393	6
23	2.043	6.714	7
24	2.084	7.036	7
25	2.123	7.357	7
26	2.161	7.678	8
27	2.197	8.000	8
28	2.232	8.321	8
29	2.266	8.643	9
30	2.299	8.964	9
31	2.331	9.286	9
32	2.362	9.607	10
33	2.391	9.928	10
34	2.420	10.250	10
35	2.449	10.571	11
36	2.476	10.893	11
37	2.503	11.214	11
38	2.529	11.535	12
39	2.554	11.857	12
40	2.579	12.178	12
41	2.603	12.500	12
42	2.626	12.821	13
43	2.649	13.143	13
44	2.672	13.464	13
45	2.694	13.785	14
46	2.715	14.107	14
47	2.736	14.428	14
48	2.757	14.750	15
49	2.777	15.071	15
50	2.797	15.393	15

Rated Value	Transformed and Corrected	Back-transformed	Back-transformed (no decimals)
51	2.816	15.714	16
52	2.835	16.035	16
53	2.854	16.357	16
54	2.872	16.678	17
55	2.890	17.000	17
56	2.908	17.321	17
57	2.925	17.642	18
58	2.943	17.964	18
59	2.959	18.285	18
60	2.976	18.607	19
61	2.992	18.928	19
62	3.008	19.250	19
63	3.024	19.571	20
64	3.039	19.892	20
65	3.055	20.214	20
66	3.070	20.535	21
67	3.085	20.857	21
68	3.099	21.178	21
69	3.113	21.500	21
70	3.128	21.821	22
71	3.142	22.142	22
72	3.155	22.464	22
73	3.169	22.785	23
74	3.182	23.107	23
75	3.196	23.428	23
76	3.209	23.750	24
77	3.222	24.071	24
78	3.234	24.392	24
79	3.247	24.714	25
80	3.259	25.035	25
81	3.272	25.357	25
82	3.284	25.678	26
83	3.296	25.999	26
84	3.308	26.321	26
85	3.319	26.642	27
86	3.331	26.964	27
87	3.342	27.285	27
88	3.354	27.607	28
89	3.365	27.928	28
90	3.376	28.249	28
91	3.387	28.571	29
92	3.398	28.892	29
93	3.408	29.214	29
94	3.419	29.535	30
95	3.429	29.857	30
96	3.440	30.178	30
97	3.450	30.499	30
98	3.460	30.821	31
99	3.470	31.142	31
100	3.480	31.464	31